Breastfeeding was assigned to five levels: (1) no breast feeding days, (2) 0 to 90 days, (3) 91-181 days, (4) 181-364 days, and (5) 365+ days – one year or more.

Maternal smoking and maternal history of asthma are well-established risk factors for child asthma.[10-11] These items are collected on the BRFSS survey, rather than the CHAMP survey. We would have liked to include these variables in all our analyses, but limitations in the way these data were collected on the BRFSS precluded this. The BRFSS survey does not identify the biological mother, so we had to use information from respondents who were the oldest females in the household as a proxy for the maternal information. After excluding male BRFSS respondents, female respondents who were not the oldest female in the household, and female respondents who were over the age of 65, there were 1,343 females from the BRFSS survey from whom we could collect information on maternal smoking and maternal history of asthma. This information is included in Figure 2. Because we had this maternal information for only about 65 percent of the 2,044 children in the study, we did not include maternal smoking and asthma as variables in the multivariate analysis.

Analysis

Descriptive statistics (rates and 95% confidence intervals) were calculated for the prevalence of child asthma by breastfeeding duration (Figure 1). The prevalence of asthma was also calculated for the risk factors of maternal smoking, maternal asthma, and low birth weight (Figure 2).

Logistic regression was used to calculate the conditional odds ratios for child asthma among the breastfeeding groups, after adjusting for the influence of other risk factors. The odds of asthma for the first four levels of breastfeeding (from "no days" to "181-364 days") were compared to the odds of asthma among mothers who breastfed for one year or more (the reference group). Low birth weight was constructed as a dichotomous variable: risk present (=1), risk not present (=0). Demographic risks included African American race, male gender, and older children (ages 6 to 12).

The SAS-callable SUDAAN software was used to calculate the descriptive statistics and the adjusted odds ratios and their corresponding 95% confidence intervals for the logistic regression analysis. All analyses of child-level variables in the study were conducted with the appropriate final weight from the CHAMP survey, and the BRFSS variables were analyzed with the appropriate weight from the BRFSS survey.

Results

Table 1 shows the characteristics of the child asthma sample population. Not surprisingly, the mother was chosen 85 percent of the time as the parent respondent most knowledgeable about the child's health. Male and female children were almost equally represented in the sample. African American children comprised about 17

Table 1.
Characteristics of Child Asthma (ages 2-12)
Study Population: 2005 North Carolina CHAMP

	Unweighted Number	Weighted Percent
Total	2,044	100%
Parent respondent		
Mother	1,803	85.3
Father	241	14.7
Ever breastfed		
Yes	1,325	65.6
No	719	34.4
Child race		
White	1,432	69.6
African American	367	16.5
Other minority	237	13.3
Don't know	3	0.4
Refused	5	0.2
Child gender		
Male	1,047	50.0
Female	994	49.6
Refused	3	0.4
Child age group		
2-5 yrs. (preschool)	755	41.4
6-12 yrs. (school age)	1,289	58.6
Birth weight (pounds)		
<5 lbs. (LBW study group)	83	3.8
5 lbs. or greater	1,915	93.2
Don't know	45	3.0
Refused	1	–
Child ever asthma		
Yes	354	16.8
No	1,690	83.2

Note: The weighted percents cannot be calculated from the numbers in this table.